

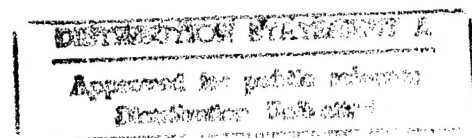
USAF AEROSPACE DOCTRINE:  
ENHANCING THE  
AIR CAMPAIGN PLANNING TOOL  
(ACPT)

A Research Project  
(abbreviated written version)

Presented to

The Directorate of Research

Air Command and Staff College



In Partial Fulfillment of the Graduation Requirements of ACSC

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## Table of Contents

ACKNOWLEDGMENTS .....	iii
LIST OF TABLES .....	v
EXECUTIVE SUMMARY .....	vi
BACKGROUND.....	1
RESEARCH OBJECTIVES.....	3
METHODOLOGY AND PROCEDURES .....	5
ACPT Historical Reference Library.....	5
ACPT Tutorial ToolBook.....	8
ACSC Curriculum Integration.....	11
SUMMARY OF FINDINGS .....	12
ACPT Historical Reference Library.....	12
ACPT Tutorial ToolBook.....	14
ACSC Curriculum Integration.....	15
RECOMMENDATIONS .....	18
ACPT Historical Reference Library.....	18
ACPT Tutorial ToolBook.....	19
ACSC Curriculum Integration.....	19
APPENDIX: ORIGINAL PROPOSAL .....	22
BIBLIOGRAPHY .....	25
VITA .....	26

## **List of Tables**

Table 1: Conventional War Conflicts in the HRL .....	13
Table 2: Operations Other than War in the HRL .....	13
Table 3: Recommended HRL Curriculum Integration .....	18

## **Executive Summary**

Desert Storm provided a renewed interest in planning air campaigns. The Air Campaign Planning Tool (ACPT), a combined HQ USAF/XOOC and ARPA initiative, provides a modern computer based planning tool to the JFACC's war planning staff.<sup>1</sup> ACSC research project 95-034 provided three enhancements to the development of the first operational version of ACPT. First, an air campaign Historical Reference Library (HRL) was created and included in the "real world" ACPT, to provide the air campaign planner with a on-line, easy to use reference of past air campaigns from the perspective of a 1990s airpower planner. Secondly, an unclassified, ACPT Tutorial was created for simultaneous release with the next version of ACPT this summer. Finally, the level of ACSC student exposure to ACPT was increased by expanding ACPT use during the ACES DRAGON exercise to over 50 students, demonstrating ACPT to 50 ACSC faculty and many senior officers at both Air University's 1994 Air & Space Symposium and CADRE's 1995 JFACC Symposium.

The HRL provides a synopsis, chronology, objectives, missions, tasks and lessons learned on eleven historical air campaigns. It covers a broad spectrum of air campaigns from major regional conflicts, like Operation Desert Storm and Rolling Thunder, to operations other than war (OOTW), like Operation Eldorado Canyon and Operation Nickel Grass. It also provides a reference for non-US conflicts like the Falklands War, the Yom Kippur War and Operation Babylon.

The ACPT Tutorial fills a training materials gap created by the rapid prototyping of the ACPT program. It provides training on how to use ACPT software through 24 realistic ACPT screens, functioning buttons, unclassified example data and explanations of the ACPT process. The tutorial does not require a Sun SPARC computer like ACPT and can be run on any desktop or notebook personal computer supporting Microsoft Windows.

Recommendations on further increasing ACPT integration into the ACSC curriculum include purchasing 22 additional database site licenses and assigning an ACSC faculty member to manage funding and administrative coordination with the Air Force War Gaming Institute (AFWGI). These actions will enable ACPT exposure to the full ACSC student population next academic year.

### **Notes**

<sup>1</sup> HQ USAF/XOOC, "The Air Campaign Planning Tool." Briefing to the Theater Battle Management General Officer's Steering Group (TBM GOSG). Headquarters Air Combat Command (HQ ACC ), Langley AFB, VA August 1994.

# **USAF AEROSPACE DOCTRINE: ENHANCING THE AIR CAMPAIGN PLANNING TOOL**

## **Background**

The tremendous success of air power in Operation Desert Storm caused an increased focus on the air campaign planning process after the war. In Desert Storm, air power's success was due, in part, to the extensive time available for detailed campaign planning and target analysis made possible by Saddam Hussein's reluctance to invade Saudi Arabia. Future US foes, having learned from Saddam's mistake, may not allow the US the luxury of months of air campaign planning. In addition, since the end of the Cold War an increase in regional instability around the world makes it impossible to accurately predict where our next conflict will occur. Furthermore, building a detailed analysis of every potential target in every possible theater is well beyond the capability of our intelligence resources and would be obsolete as soon as it was completed. Finally, air targeting data requirements are increasingly complex as the US relies more and more on precision guided munitions. This information is difficult to collect on short notice and almost impossible to analyze manually. In particular, the rationale for planning decisions can be easily lost as the volume of this data grows. All of these factors combined to create the need for an automated tool to assist the Joint Force Air Component Commander (JFACC) and his staff to rapidly build and analyze various air strategies.

HQ USAF/XOOC (Checkmate) and the Advanced Research Projects Agency recognized this need and in November 1992 initiated a project to create what has become the Air Campaign Planning Tool (ACPT). ACPT is a computer application using advanced visualization techniques to host the JFACC's planning process and support the rapid development and assessment of air strategy options.<sup>1</sup> The mission of the project is to provide the JFACC with a tool to enhance strategic and operational air campaign planning by integrating operations and intelligence resources in one system designed to support force application scenarios. Prototype development began in March 1993 and prototype testing began at Air University in December of the same year. HQ USAF/XOOC's goal is to produce a finished version of ACPT by October 1995.<sup>2</sup>

ACSC's involvement with ACPT began last academic year with a project to improve ACPT's user friendliness and investigate how it could be integrated into the ACSC curriculum.<sup>3</sup> This briefly summarizes the events preceding our research group's entry into improving the ACPT.

## **Research Objectives**

Before outlining the objectives of ACSC Research Project 95-034, USAF Aerospace Doctrine it is necessary to briefly explain the evolution our project underwent as the academic year progressed. The project began with the merger of an ACSC faculty research proposal on USAF doctrine and operations other than war (OOTW) with an ACSC student research proposal on developing improvements to the HQ USAF/XOOC Air Campaign Planning Tool computer application. The research objectives related to the merger are explained in detail in the research proposal found in the appendix. To summarize our original proposal, the objectives included expanding ACPT (a force application tool) with the additional capability of handling the planning of OOTW air campaigns (primarily oriented toward force enhancement and force support missions) and further increase the level of ACPT integration into the ACSC curriculum. During the fall of 1994, two prototype ToolBook products supporting these goal were developed, an example historical reference library oriented heavily towards OOTW scenarios and an ACPT tutorial ToolBook designed to train ACSC students on how to use ACPT in support of the ACES DRAGON exercise scheduled for the Spring of 1995.

These two products were presented to HQ USAF/XOOC for concept approval in December 1994, and two things became apparent. First, HQ USAF/XOOC is not currently interested in expanding ACPT into a force enhancement and force support tool.<sup>4</sup> They are diligently trying to finalize a force application tool and requested our efforts proceed in that direction as well. Secondly, they were very favorably impressed with the

concept behind both the historical reference library and the tutorial ToolBooks. These events led to the final objectives of research project 95-034.

- 1) Enhance the ACPT through the incorporation of a historical reference library function into the next software release of the ACPT.
- 2) Produce an ACPT tutorial ToolBook capable of supporting the training needs of both the operational air force planner and the academic ACSC student.
- 3) Continue to increase the level of ACPT integration into the ACSC curriculum to facilitate acceptance of ACPT on planning staffs manned by ACSC graduates.

## **Methodology and Procedures**

Since the research project involved three distinct goals, each requiring different methodology and procedures, this section of the paper will be divided into three corresponding sections: ACPT Historical Reference Library, ACPT Tutorial ToolBook and ACSC Curriculum Integration.

### **ACPT Historical Reference Library**

The ACPT Historical Reference Library portion of the research project involved creating a brand new software product and posed the following problems. First, the basic user interface, the logic flow of the ToolBook and the informational content areas an air planner would find useful needed to be identified. Secondly, the desired air campaigns needed to be selected. Next, the selected air campaigns needed detailed research to address each content area identified in step one. Finally, the ToolBook software product we developed had to be “ported” or transferred into ACPT’s UNIX computer operating environment.

ACPT itself was the overriding driver for the design of the basic user interface, the logic flow and the identification of the information content areas. The historical reference basic user interface was kept as close as possible to the conventions already in use in the ACPT. This resulted in most screens being made to look like corresponding screens in the ACPT. Some allowances were made to improve the usability of the reference library, due to ToolBook capabilities not supported by standard ACPT conventions. These

included, among others, the incorporation of multimedia resources to enhance understanding and the use of menu option flowcharts which clarified a user's options in exploring a historical library entry. Furthermore, the ToolBook design was modified to incorporate specific recommendations from HQ USAF/XOOC.<sup>5</sup>

The historical reference library emulated the basic ACPT logic flow of strategy to task. This involved dividing the historical reference material into objectives, missions and target sets addressed by ACPT even though the specific terminology or concept may not have existed at the time of the original conflict. For instance, the section on the Israeli-Arab Yom Kippur War of 1973 divides the air missions into sections on Close Air Support (CAS) and Air Interdiction (AI) when the Israeli's did not make such a distinction themselves at the time of the conflict. The Historical Reference Library is written for an American air planner of the 1990s and addresses historical conflicts in the doctrinal terms he should be familiar with from *Air Force Manual 1-1, Basic Aerospace Doctrine of the United States Air Force, March 1992* and *Joint Publication 3-0*.

Information content areas were also primarily derived from the ACPT conventions of objectives (national, political, CINC's and air), tasks, target sets and missions (airspace control, force application and force enhancement). Additional content areas were added based on the historical nature of the product to include, a synopsis, chronology and lessons learned sections.

Air campaign selection began by first brainstorming as many of the historic airpower conflicts as possible. Brainstorming used two perspectives, one chronological and one doctrinal. Chronologically, air campaigns were listed from the advent of air conflict in the years just preceding World War I to the present. Doctrinally, the campaigns

were divided by category; conventional war to include major and lesser regional conflicts (MRC or LRC)<sup>6</sup> and operations other than war to include attacks/raids, operations to restore order, peace support and security assistance.<sup>7</sup> This convention was a blend of concepts found in *A National Security Strategy of Engagement and Enlargement, July 1994* and *Joint Publication 3-0*. Once the field of possible air campaigns was listed and categorized doctrinally, the most promising air campaigns in each doctrinal area were identified. The criteria for selecting the most promising air campaigns was primarily subjective, but did include an intentional bias toward more recent conflicts. This was done to minimize the impact of the airpower technology in use at the time on the lesson(s) applicable to today's planner. Preliminary library research was conducted at the Air University Library on the most promising air campaigns to confirm the availability of the desired information and the validity of their selection.

Detailed research to address the desired informational content areas included mainly library research at the Air University Library using both first and second source literature searches. The lessons learned section to each selected conflict contains operational level lessons derived from literature reference and, in most cases, original conclusions from the research team.

The remaining task is to determine how to present the information in the HRL to the operational planner. We examined two options. First, use the HRL ToolBook as a story board or template for the ACPT contract software engineers to guide the coding of our ideas into ACPT software using the C++ programming language. The other option is to have the ACPT contract software engineers use a DOS emulator window within UNIX and run our ToolBook inside it. The second option saves time and money by avoiding the

re-coding of an already operating piece of software. HQ USAF/XOOC recommended using the second option of DOS emulation and will implement the HRL in this form.<sup>8</sup>

### **ACPT Tutorial ToolBook**

During the last year, the Air Campaign Planning Tool went through extensive prototyping with operational users resulting in numerous modifications by contractor software developers. One of the casualties of this rapidly changing environment was development of any supporting training materials to familiarize new users with ACPT technology or functionality. Our ACPT tutorial ToolBook began as an attempt to show ACSC students how ACPT works before using it in an operational exercise, ACES DRAGON. The original intent was to demonstrate the process flow and sample display screens, but not necessarily to build a working model of ACPT. The ToolBook would familiarize users with ACPT and act as a ready reference source. Because of the limited availability of UNIX-based workstations at ACSC, many students have only a limited access to ACPT. Therefore, we designed the tutorial ToolBook to be run on any PC or notebook computer running Microsoft Windows.

However, during a demonstration of this initial ACSC tutorial ToolBook in December 1994, HQ USAF/XOOC made it known that there was also a need for this kind of tutorial in the operational Air Force.<sup>9</sup> Thus our focus shifted away from solely supporting the ACSC academic environment to also addressing the needs of real world ACPT users. ACPT is being deployed to operational theaters around the world, each of whom employ slightly different procedures for air campaign planning, therefore ACPT

training needed to allow for theater specific tailoring. By developing the ACPT Tutorial ToolBook for Microsoft Windows PCs, each theater can modify the training tutorial to meet their own needs “in house” using Asymetric’s, commercially available, ToolBook authoring software.

The above factors also caused our goal for the tutorial to change. The goal went from showing the ACSC student a limited sequence of top level ACPT screens with explanations, to providing a product capable of training new operational users. This meant including realistic screens, program navigation, limited functioning buttons and some demonstrations of ACPT results to support the operational user’s training needs. Full ACPT functionality was not desired for two reasons. First, the rapid pace of ACPT software releases (we began with Release 94J and concluded with Release 95A) would burden the tutorial ToolBook with too many updates for operational users to keep it current. Additionally, we rejected including any database links to the external software applications used by ACPT because they would overly complicate the tutorial ToolBook, detracting from its inherent simplicity, and restrict its use to classified computer systems. Instead, the primary emphasis remained on maintaining the conceptual flow of ACPT use to give the user the look and feel of navigating through the real ACPT.

The development of the ACPT tutorial ToolBook also pursued two technical approaches. The first approach involved importing ACPT screens, in a digital format from a UNIX utility, into the tutorial ToolBook as bitmap images. Two problems quickly became apparent. The file conversion changed the appearance of text, making some screens illegible despite attempts to fine-tune the images. Also, the file size of the bitmap images caused the tutorial ToolBook to cross the 10 megabyte threshold, greatly

complicating its transmission and storage. Therefore, a second concept was pursued that involved re-drawing ACPT screen features using ToolBook capabilities. This approach reduced the file size and allowed the button functionality required to support the operational user's training needs. The tutorial ToolBook incorporates as many features as possible short of tying the tutorial to outside data sources, like intelligence databases, imagery or CTAPS. An additional complication occurred when the ACPT contractor released version 95A of the software which changed half of the screens, necessitating rework of the corresponding tutorial ToolBook screens. Finally, the addition of introduction and background sections before the actual ACPT tutorial screens provided the new user with ACPT development history, project status and a picture of where ACPT fits into the air campaign planning process.

The development process continued with the final selection of ACPT screens for replication in the tutorial ToolBook. A total of 24 screens were selected based on their criticality to the ACPT process and level of classification (ACPT runs at SECRET based on the contents of the database). The 24 ACPT ToolBook screens were simulated using ToolBook capabilities to maximize their readability, minimize ToolBook file size and keep the tutorial unclassified. Once the basic features of each screen were drawn, the last step was to provide the functionality required to make the look and feel of the tutorial more like the real ACPT program.

## **ACSC Curriculum Integration**

The increased integration of ACPT into the ACSC curriculum was one area of our project with roots in last year's ACPT related ACSC research project. The ACSC AY94 ACPT project introduced ACPT into the ACSC academic environment to a single ACSC seminar during the ACES DRAGON exercise.<sup>10</sup> This year our goal was to expand ACPT involvement into 10 ACSC seminars as an operational test of available resources prior to including all 44 ACSC seminars in academic year 1996. In the process we would identify the exact support requirements necessary to provide all of next year's ACSC students with hands-on exposure to ACPT. ACPT runs on a Sun Computer Systems SPARC workstation running in the UNIX computer operating system environment. This is an expensive computer not readily found within ACSC, but supported by the Air Force War Gaming Institute (AFWGI), a part of the Air University community. In accomplishing our curriculum integration goal we examined two aspects of AFWGI's ability to support ACPT for use during the ACES DRAGON exercise. First we examined their technical capability to concurrently run ACES and ACPT software for 10 seminars. Secondly, we evaluated AFWGI's ability to administratively support ACSC's ACES planning process. Other related tasks included getting the AFWGI's Sun SPARC equipment to work using ACPT's different windowing system and the building of an unclassified target data base not found in fielded ACPT systems to support ACES DRAGON.

## **Summary of Findings**

The results of our research project are best understood by viewing the Hyper text ToolBook applications. The following discussions are intended to highlight our findings not readily apparent in the ToolBooks and are again divided into the three sections of Historical Reference Library, Tutorial ToolBook and ACSC Curriculum Integration.

### **ACPT Historical Reference Library**

The Historical Reference Library (HRL) is currently being incorporated into a “real-world” air campaign planner “as is” and is scheduled to be included in the first ACPT Operational Version in October 1995. The reference library provides analysis on eleven air campaigns across two conventional war categories and four operations other than war (OOTW) categories. Included are four air campaigns from major regional conflicts (MRC) and two from lesser regional conflicts (LRC). Refer to Table 1 for an overview of the belligerents, time periods and geographical regions of the conventional war air campaigns included in the Historical Reference Library ToolBook.

**Table 1: Conventional War Conflicts in the HRL**

<b>Conflict / (type)</b>	<b>Belligerents</b>	<b>Time Period</b>	<b>Geographic Region</b>
<b>Desert Storm</b> (MRC)	UN Coalition & Iraqi	1991	Middle East
<b>Rolling Thunder</b> (MRC)	United States & North Vietnam	1965-68	South East Asia
<b>Linebacker</b> (MRC)	United States & North Vietnam	1972-73	South East Asia
<b>Operation Strangle</b> (MRC)	UN Coalition & North Korea/PRC	1950-51	Korean Peninsula
<b>Falklands Islands</b> (LRC)	United Kingdom & Argentina	1982	South Atlantic
<b>Yom Kippur War</b> (LRC)	Israel & Arab Coalition	1973	Middle East

In operations other than war, five air campaigns are addressed across four doctrinal areas; attacks and raids, operations to restore order, peace support operations and security assistance surges. Refer to Table 2 for an overview of the belligerents, time periods and geographical region of the OOTW air campaigns included in the Historical Reference Library ToolBook.

**Table 2: Operations Other than War in the HRL**

<b>Conflict / (type)</b>	<b>Belligerents or Participants</b>	<b>Time Period</b>	<b>Geographic Region</b>
<b>Eldorado Canyon</b> (Attacks & Raids)	United States & Libya	1986	Middle East
<b>Operation Babylon</b> (Attacks & Raids)	Israel & Iraq	1981	Middle East
<b>Just Cause</b> (Restore Order)	United States & Panama	1989	Central America
<b>Berlin Airlift</b> (Peace Support)	United States & USSR	1948	Europe
<b>Nickel Grass</b> (Security Assistance)	United States & Israel	1973	Middle East

## **ACPT Tutorial ToolBook**

The ACPT Tutorial ToolBook was provided to HQ USAF/XOOC (Checkmate) for distribution to USAFE and PACAF with the release of ACPT version 95A this summer. It was also provided to ACSC students to support their use of ACPT during AY95 ACES DRAGON exercise. The tutorial has two main sections: an introduction section and the ACPT operational screens tutorial section. The introduction section includes some background to describe ACPT's development and status. It also provides some additional information on computer system configuration, outside data interfaces, and common UNIX attributes like the X-windows environment. In the second part of the tutorial all of the screens are exact replicas of the ACPT operational screens and most of the buttons work realistically. There is a scenario that allows the user to enter a new task and go through the motions of creating a target list for a task. Although the data shown is fixed and doesn't provide the user with the opportunity to sort or run queries against a database, the results screens are realistic in appearance and familiarize the user with the expected output.

Instruction fields were created for each of the major screens to provide the user with guidance on the suggested training flow and helpful hints on what functions of ACPT are critical for developing a Master Attack Plan (MAP). Additionally, pop-up boxes describe the function and use of the important buttons. Navigation through the ACPT screens is as realistic as possible given DOS limitations. It was too difficult to mimic the UNIX Open Windows windowing presentation, especially without a three button mouse.

The result is a tutorial ToolBook that can be used first to familiarize users prior to their exposure to ACPT and later as a reference while ACPT is being run.

### **ACSC Curriculum Integration**

Our efforts to increase the integration of ACPT into ACSC centered on increasing the number of students able to use ACPT during the ACES DRAGON exercise this year and in the process identify the issues which need to be resolved for complete ACSC student population exposure in academic year 1996. Our initial goal was to increase the number of ACSC students exposed to ACPT during ACES DRAGON to 10 ACSC seminars (over 140 students). Due to hardware and software limitations described below, only four seminars (over 50 students) were eventually able to use ACPT. This still represents a 400% increase in ACPT exposure as compared to AY94. In addition, we briefed about 50 ACSC faculty members on ACPT and provided ACPT demonstrations to both Air University's 1994 Air & Space Symposium and the CADRE's 1995 JFACC Symposium.

The following technical findings were made over the course of the year. AFWGI's technical capability to support ACPT hinges on the hardware and software available on their unclassified local area network (LAN). AFWGI hardware stands at over 25 SPARC workstations and can support the hardware needs of an entire ACSC class.<sup>11</sup>

AFWGI software, on the other hand, posed significant limitations to ACPT integration this year. Technical limitations occur because ACES and ACPT use different windowing systems and require different versions of the same database management

system. This is partly due to ACES DRAGON and the ACSC curriculum requiring ACPT to be used in an unclassified mode as opposed to its normal classification of SECRET. AFWGI currently has enough database software site licenses to support the existing needs of ACES DRAGON but not enough excess licenses to also run ACPT on each of their work stations.<sup>12</sup> AFWGI was able to use one of its site licenses to support ACPT on one LAN server. In a preliminary test, we attempted to work 10 ACPT users on this single server using the AFWGI unclassified LAN. The maximum number of concurrent users able to share ACPT on this server, with reasonable response time and crash protection, was four. Thus we chose to scale back the use of ACPT during the ACES DRAGON exercise from 10 seminars to four seminars to ensure the available system configuration did not detract from the students ACES war gaming experience. Our tests did succeed in demonstrating the feasibility of running ACPT in a limited multi-user mode and provided HQ USAF/XOOC the first full-scale test of the newest ACPT software release 95A. ACPT also provided, for the students who get to use it, an excellent method to organize their campaign planning effort and greater flexibility in running target database queries to build target packages.

The following findings were made concerning AFWGI's administrative capability to support ACPT and ACES DRAGON. ACES DRAGON planning in the current ACSC curriculum takes place over a three month period as students learn about the different parts of air campaign planning. The spread out nature of this planning and frequent ACSC schedule changes impose a large administrative burden on the AFWGI to support ACES DRAGON. For each ACES DRAGON planning day the AFWGI has to configure one

computer per scheduled seminar to run ACPT, followed by a post-planning day  
reconfiguration back to AFWGI's own configuration to support their other taskings.<sup>13</sup>

## Recommendations

The following recommendations describe where we think our ToolBook products can be used in the ACSC curriculum and where future ACSC involvement with ACPT research and ACPT curriculum integration should proceed.

### ACPT Historical Reference Library

The Historical Reference Library ToolBook presents ACSC a stand-alone, readily available instructional material which could be beneficial to next years ACSC curriculum. In our opinion, the historical reference library has potential to benefit the ACSC courses and lessons (AY95) listed in Table 3.

**Table 3: Recommended HRL Curriculum Integration**

Applicable HRL Section(s)	ACSC Course and Lesson (Academic Year 1995)					
	War Theory		Strategic Structures SS 517	Operational Structures		
	MT 528	MT 533		OS 504	OS 509	OS 525
Desert Storm	x	x	x	x	x	x
Rolling Thunder	x	x		x		
Linebacker	x	x		x		
Operation Strangle	x	x		x		
Falklands War		x		x		
Yom Kippur War		x		x		
OOTW sections		x		x		

## **ACPT Tutorial ToolBook**

The ACPT Tutorial ToolBook also presents ACSC a stand-alone, readily available training material which could be beneficial to next years ACSC curriculum. In our opinion, the tutorial has potential to benefit the ACSC Air Campaign and War Termination courses (AY95) especially if ACPT use during ACES DRAGON is expanded in the next academic year.

## **ACSC Curriculum Integration**

Using ACPT during ACES DRAGON reinforces the air campaign planning concepts taught in the ACSC curriculum. Furthermore, as ACPT becomes fully operational next year, ACSC has the opportunity to provide follow-on assignment staffs with an ACSC graduate familiar with what ACPT does and how to use it. To further this goal we recommend the following steps be taken to increase ACPT use next academic year. First, the database software site license problem needs to be fixed. This can be done by either having ACPT and ACES use the same version of the database or AFWGI will need additional database site licenses. It is unlikely, that ACPT will be modified to use the database version used by ACES DRAGON, an academic war game. Therefore, the better course of action is to pursue funding for the additional site licenses. To support an entire class of ACSC students (44 seminars) would require purchasing at least 22 additional database software site licenses. We also recommend the purchase of additional hardware to provide ACPT with a backup LAN server. These figures are based on a morning /

afternoon split of the ACSC class, with only 22 seminars working at one time. This coincides with the existing workspace limits of the AFWGI building.<sup>14</sup>

Secondly, administratively ACSC should work with the AFWGI to build a more mutually supportive arrangement to ACPT planning. Our recommendation is for the ACSC faculty to review the prospect of consolidating ACES planning into one block of consecutive days just prior to the ACES DRAGON exercise.

Finally, based on our experience this year of attacking the technical and administrative challenges of integrating ACPT into the curriculum, we recommend the assignment of an ACSC faculty member to solve funding and coordination issues. Many of the issues we address involve money or on-base interagency relationships, these are best handled by a permanent party officer.

## Notes

<sup>1</sup> Ibid.

<sup>2</sup> Ibid.

<sup>3</sup> Charles Shugg, Major. "The Air Campaign Planning Tool." Research Project briefing to ACSC/DR. Air Command and Staff College, Maxwell AFB, AL May 1994.

<sup>4</sup> Robert A. Plebaneck, Colonel. Chief CHECKMATE Division, HQ USAF, Pentagon VA, Personal interview. December 1994 and March 1995

<sup>5</sup> Ibid.

<sup>6</sup> U.S. Government Printing Office. A National Security Strategy of Engagement and Enlargement, Washington DC: GPO, July 1994, 7.

<sup>7</sup> The Joint Staff. Joint Pub 3-0: Doctrine for Joint Operations, Washington DC: HQ Joint Staff, 9 September 1993, Chapter V.

<sup>8</sup> Plebaneck, personal interview

<sup>9</sup> Ibid.

<sup>10</sup> Shugg, "The Air Campaign Planning Tool".

<sup>11</sup> Loftus, Mike and Hightower, Dave, AFWGI System Analyst, Air Force War Gaming Institute, Maxwell AFB AL. Numerous personal interviews. October 1994 through March 1995

<sup>12</sup> Ibid.

<sup>13</sup> Ibid.

<sup>14</sup> Ibid.

## **Appendix: Original Proposal**

### **USAF Aerospace Doctrine (95-034)**

#### **Project Statement:**

Develop tools to supplement our doctrine and our planning to more effectively design forces, operations, and logistics for missions which are not characterized by major conflict and large scale hostilities

#### **Problem Statement:**

The world has changed, and military missions of the future may require innovative solutions which don't comfortably fit conventional airpower paradigms. US forces will be committed to operations and missions which are not characterized by major hostilities. "Peacekeeping, peacemaking, counterinsurgency, humanitarian relief, special operations, unconventional warfare, and operations other than war"-type labels may more accurately describe the nature of how US military forces are predominately employed in the future. Theater planners will have to have the information and tools to maximize to use of these limited aerospace forces.

#### **Background:**

Aerospace doctrine, air campaign planning, and operational training and employment have historically been oriented toward a major conflict--for many years a Cold War scenario pitted NATO forces against the Warsaw Pact; later scenarios feature major contingencies involving UN coalitions against major Third World powers (Iraq and Korea). The primary focus of air campaign planning has been the examination of enemy

targets, deployment of maximum numbers of capable aircraft platforms, selection of appropriate weapons to employ against those targets, generation of air tasking orders to package aircraft to penetrate threat defenses and deliver ordnance, and the intelligence analysis of target destruction to determine mission success. The prerequisite to Force Application has been Aerospace Control, to minimize losses to extensive networks of hostile defenses and subsequently to enable air forces to perform their various missions. Force enhancement and force support have been assigned background support roles in planning for major hostilities. For air forces whose primary responsibility throughout its history has been targeting a hostile nation's armed forces and clearing the skies of enemy airpower, future airpower planners must now also figure out how to keep a nation's people alive, prevent opposing civilian and paramilitary factions from murdering each other, conduct surveillance and arrest of international criminal and terrorist elements, keep a nation's airpower and defenses from challenging the peaceful supervision/ enforcement of legitimate international sanctions and mandates, and providing the necessary goods and services to affect recovery after natural and manmade cataclysms.

**Scope:**

The research team plans to conduct research with a primary focus on how to configure the Air Campaign Planning Tool (ACPT) to give planners a tool which will help them better plan for these new "non-war" missions.

**Research Approach:**

Currently, ACPT is designed to apply force through analytical targeting--it is optimized to be a force application tool, but it also has the capability of accessing vast amounts of data and documenting planning actions and linking objectives to operations.

The team will work with Checkmate and ISX to build a non-war scenario of a Bosnia, Somalia, Haiti, Panama, Rwanda nature--one where the predominate task is something other than methodical targeting of an enemy nation by lethal weapons. This scenario will be used to integrate ACPT into the ACSC curriculum and foster future planning tool development in the research community.

#### **Results:**

The team will produce ToolBooks which address how the various airpower doctrine roles can be developed in ACPT, giving special emphasis to the roles of Force Enhancement and Force Support in non-war operations (peacekeeping and peacemaking). In addition the team will produce a ToolBook showing a potential development of ACPT to include a historical lessons learned function.

#### **Schedule:**

Oct 28	Project Outline to ACSC/DR, HQ USAF/XOOC and HQ USAF/XOXD
Nov 1	Research Begins
Nov 16	Research team participation in War Game using ACPT
Nov 30	Brainstorming on ACPT development ideas
Dec 16	Historical lessons learned research completed
Feb 9	ACPT development ToolBook design begins
Mar 1	First draft on ACPT development ToolBooks
Apr 5	Final cut on ACPT development ToolBooks
Apr 10	ACPT planning for use in ACES
May 1	Research project due to ACSC/DR, HQ USAF/XOOC and HQ USAF/XOXD

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- U.S. Government Printing Office. A National Security Strategy of Engagement and Enlargement, Washington DC: GPO, July 1994.

Note: Bibliography entries for the contents of the ACPT Historical Reference Library and ACPT Tutorial Reference Library are included in the ToolBooks.

## **Vita**

The members of this research project have chosen not to provide personal information in the vita section. Anyone wishing to contact one or more of the authors can reach us by contacting ACSC/DEW or ACSC/DR who have access to our follow-on assignment information.